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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,212	03/12/2001	Tomoyuki Nakamura	OOCL-52 (US-P1427)	8909
26479	7590	10/02/2006	EXAMINER	
STRAUB & POKOTYLO 620 TINTON AVENUE BLDG. B, 2ND FLOOR TINTON FALLS, NJ 07724			REKSTAD, ERICK J	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/804,212	Applicant(s) NAKAMURA ET AL.	
	Examiner Erick Rekstad	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 7 is/are allowed.
- 6) ☐ Claim(s) 1-3, 5, 6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is an Office Action for application no. 09/804,212 in response to the RCE filed on August 18, 2006 wherein claims 1-15 are presented for examination.

Response to Arguments

Applicant's arguments filed August 18, 2006 have been fully considered but they are not persuasive. The Applicant has argued that Chiba and Johnson do not teach the requirement of a correction processing means wherein the correction is based on image distortion due solely to orientations and positions of each of the plurality of image projecting means with respect to image display means and determined on the basis of the image displayed on the image display means.

The Examiner respectfully disagrees. Though the Applicant has provided the new limitations, these limitations are taught by Johnson. Johnson teaches the correction of image distortion due solely to orientations and positions as shown below for the rejection of claims 1 and 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,860,912 to Chiba in view of US Patent 6,310,650 to Johnson et al.

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[claim 1]

As shown in Figures 7 and 8, Chiba teaches a stereoscopic image display device. The device comprises a display (monitor 5) used for projecting the image signals for the one eye and the other eye which have parallax (Abstract, Col 2 Lines 42-45, Col 5 Lines 3-21). Chiba further teaches the viewing of the stereoscopic images using glasses (spectacles 6, Fig. 7) in order to view only the image for one eye and only for the other eye (Col 7 Lines 13-17, Col 13 Lines 14-30, Figs. 12A-12D). Chiba teaches the correction processing means (keyboard 7, image correction 25R and 25L, Fig. 8) for carrying out correction processing on at least one of image signals for the one eye and the other eye, on the basis of an amount of correction of image distortion determined on the basis of the image displayed on the image display means (Col 5 Lines 22-36, Col 7 Lines 17-18, Col 10 Lines 21-55, Fig. 9). The correction means of Chiba is related to providing an optimal stereoscopic image as shown by the citation above. Chiba does not specifically teach the use of a plurality of image projection means nor the correction processing means to correct for distortion due solely to orientations and positions of each of the plurality of image projecting means.

As shown in Figure 3, Johnson teaches the use of a plurality of CRT based image projecting means (projectors 54 and 56) which project onto an image display means (58)(Col 2 Lines 55-56, Col 6 Lines 7-18). Johnson teaches taking a single video input and processing it for display using the projection system (Col 6 Lines 28-39). Johnson teaches the use of such a projecting means for flight simulators or for providing higher resolution images (Col 1 Lines 23-26 and Lines 36-45). It would have been

obvious to one of ordinary skill in the art at the time of the invention to replace the monitor of Chiba with the projectors of Johnson as both are CRT based and projectors are an inexpensive alternative for large displays as suggest by Johnson.

Johnson further teaches the importance of a correction processing means for calibrating the plurality of projecting means in order to correct image distortion due solely to orientations and positions of each of the plurality of image projecting means with respect to image display means (Col 2 Lines 37-52, Col 6 Lines 59-65, Col 14 Lines 44-65, Col 15 Lines 46-48 and Line 66-Col 16-Line 1, Figs. 15 and 16). Note, the correction process may perform compensation for spatial non-uniformity or other non-desirable characteristics (Col 2 Lines 50-53). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the correction processing means of Johnson with the stereoscopic image projection device of Chiba and Johnson in order to remove non-desirable characteristics caused by spatial non-uniformity as taught by Johnson.

[claims 2 and 9]

As shown above for claim 1, Chiba teaches a correction means to correct the stereoscopic images in order to provide an optimal stereoscopic display. Chiba teaches the use of a keyboard for the input of the required image correction (Col 10 Lines 21-55). Chiba teaches the use of the input for the keyboard by correction processing means (25R and 25L, Fig 8) for each image signal (Col 10 Lines 21-55, Fig. 9). Chiba does not teach the use of a pick-up means for correction for picking-up an image projected on the image display means, for correction and the correction computing

means using the pick-up image data to correct the image distortion due solely to orientations and positions of each of the plurality of image projecting means with respect to image display means.

As shown in Figure 3, Johnson teaches the use of a pick-up means (camera 62) for picking up an image projected on the image display (58) in order to correct for image distortion due solely to orientations and positions of each of the plurality of image projecting means with respect to image display means. The pick-up image is used by the correction computing means (52) to correct the image signal (66) (Col 6 Lines 18-26, Col 6 Line 40-Col 7 Line 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the correction method of Johnson with the stereoscopic image projection device of Chiba and Johnson in order to provide a display that can be calibrated and re-calibrated with little or no manual intervention (Col 2 Lines 38-41).

[claims 3, 5, 10 and 11]

Chiba specifically teaches the use of liquid crystal shutter spectacles in the stereoscopic image device as required by claims 5 and 11 (Col 13 Lines 14-30, Figs. 12A-12D). Chiba further teaches the prior art of using polarizing means (Col 2 Lines 1-54, Figs. 2-4). Chiba further teaches the utilization of polarization in place of the liquid crystal shutters (Col 2 Lines 52-54). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the polarizing means of Chiba instead of the liquid crystal shutter means of Chiba as it is well known in the art to use either polarizing

or shutters for stereoscopic imaging as taught by Chiba (Col 2 Lines 1-54, Figs 2-4) and polarizing is an inexpensive alternative to shutters.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba and Johnson as applied to claim 5 above, and further in view of US Patent 5,879,065 to Shirochi et al.

[claim 6]

Chiba specifically teaches the use of liquid crystal shutter spectacles in the stereoscopic image device as required by claim 5 (Col 13 Lines 14-30, Figs. 12A-12D). Chiba further teaches the prior art of using polarizing means (Col 2 Lines 1-54, Figs. 2-4). Chiba further teaches the utilization of polarization in place of the liquid crystal shutters (Col 2 Lines 52-54). Chiba does not teach the use of a second shutter means wherein the projectors and the spectacles have shutters.

As shown in Figure 12, Shirochi teaches the prior art in which the projectors and the spectacles are polarized (Col 1 Lines 10-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the projector and spectacle polarizers with shutters as the techniques are interchangeable as taught by Chiba (Col 2 Lines 52-54).

Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba and Johnson as applied to claims 1 and 9 above, and further in view of WO 94/22050 to Berglund.

Chiba and Johnson teach the devices of claims 1 and 9 as shown above. Johnson further teaches the use of multiple projectors to produce a single image as

shown in Figure 3 (Col 2 Lines 55-56, Col 6 Lines 7-18). Chiba and Johnson do not teach the use of a multi-primary-color projector.

As shown in Figure 37, Berglund teaches the use of a six primary color projector for use with a PD-LCD projection system (Page 7 Lines 11-25, Page 26 Lines 19-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the projectors of Johnson with the projectors of Berglund in order to use a PD-LCD system for the sharpest and clearest 3D picture.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba and Johnson as applied to claim 1 above, and further in view of US Patent 5,612,735 to Haskell et al.

[claim 13]

As shown above, Chiba and Johnson teach the stereoscopic image projection device of claim 1. Chiba teaches the use of a monitor while Johnson teaches the use of multiple projectors. Chiba and Johnson do not teach the use of a first projector receiving a first signal and a second projector receiving a second signal wherein the images projected by the two projectors are combined to define a stereoscopic image on the display.

As shown in Figure 1, Haskell teaches the use of a monitor to present the stereoscopic images or the use of two projectors. The projectors are set up so that one projector is presented the left image and the other projector is presented the right image. The projected images are combined to define a stereoscopic image on the image display (130) (Col 4 Line 65-Col 5 Line 35). It would have been obvious to one of

ordinary skill in the art at the time of the invention to use the multiple projecting means of Haskell with the system of Chiba and Johnson as Haskell teaches the use of projecting the images as an alternative method to using a monitor.

[claim 14]

Haskell further teaches the images are presented as overlapping on the image display means (Col 4 Lines 65-Col 5 Line 35, Fig. 1). As shown above, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the multiple projecting means of Haskell with the system of Chiba and Johnson as Haskell teaches the use of projecting the images as an alternative method to using a monitor.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba and Johnson as applied to claim 1 above, and further in view of US Patent 6,456,339 to Surati et al. and US Patent 3,943,279 to Austefjord.

[claim 15]

As shown above, Chiba and Johnson teach the device of claim 1. Johnson further teaches the correction of spatial distortions of the projectors using predetermined pattern images (Col 7 Line 61-Col 8 Line 18). Johnson does not specifically teach the type of spatial distortion.

Surati teaches a similar multi-projecting means as Chiba and Johnson, which uses multiple projectors and an imager to calibrate the projectors (Col 8 Lines 48-58, Fig. 1). Surati further teaches the correcting of geometric errors such as keystoneing for the projectors (Col 9 Lines 13-25).

Surati does not specifically teach keystone error is caused by parallax. Austefjord teaches that a keystone error is caused by parallax (Col 3 Lines 30-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of keystone correcting of Surati with the device of Chiba and Johnson in order to correct the geometric errors caused by parallax as taught by Surati and Austefjord.

Allowable Subject Matter

Claims 4 and 7 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In regards to claims 4 and 7, Chiba and Johnson teach the system of claim 3 as shown above. As shown in Figure 3, Johnson teaches the use of a pick-up means (camera 62) for picking up an image projected on the image display (58). The pick-up image is used by the correction computing means (52) to correct the image signal (66) (Col 6 Lines 18-26, Col 6 Line 40-Col 7 Line 8). Chiba and Johnson do not teach the pick-up means containing a rotation control means and a pick-up time counting means. These features taken with the others in the claims define over the prior art.

Conclusion

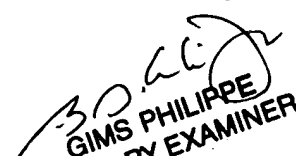
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erick Rekstad
Examiner
AU 2621
(571) 272-7338
erick.rekstad@uspto.gov


GIMS PHILIPPE
PRIMARY EXAMINER